

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113682 A1

(51) International Patent Classification⁷:
F02B 75/32, F16H 21/18, 21/22, 21/18

F01B 9/06,

(74) Agents: HENSHAW, Damon et al.; Davies Collison Cave,
1 Nicholson Street, Melbourne, Victoria 3000 (AU).

(21) International Application Number:
PCT/AU2004/000808

(22) International Filing Date: 21 June 2004 (21.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003903244 26 June 2003 (26.06.2003) AU
2003907214 5 December 2003 (05.12.2003) AU
2003270961 17 December 2003 (17.12.2003) AU

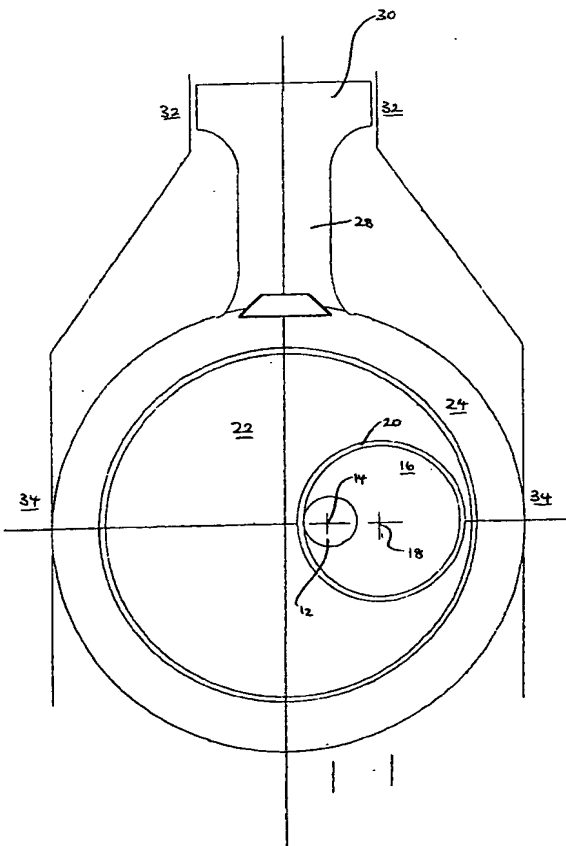
(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

(71) Applicant and
(72) Inventor: JOHNSON, Arvid, Murray [AU/AU]; Factory
4/63 Whiteside Street, Clayton South, Victoria 3169 (AU).

[Continued on next page]

(54) Title: LINEAR INTO ROTATORY OR VICE VERSA MOTION CONVERTOR



(57) Abstract: An apparatus for converting linear motion into rotary motion or vice versa comprising a shaft (12) which is rotatable about a fixed axis (14) and carrying a circular cam (16) mounted eccentrically relative to that axis (14), the cam (16) being rotatably mounted within a disc (22) which is in turn rotatably mounted within a housing (24) mounted for linear reciprocating motion along a rectilinear axis (26) in a direction transverse to the axis (14) of the shaft (12) whereby reciprocating motion of the housing (24) along the rectilinear axis (26) is converted into rotation of the shaft (12), or rotation of the shaft (12) is converted into reciprocating motion of the housing (24) along the rectilinear axis (26).

WO 2004/113682 A1

WO 2004/113682 A1



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, — with amended claims
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/000808

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: F01B 9/06; F02B 75/32; F16H 21/18, 21/22, 21/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC F16H 21/- & F01B 9/- VOL SEARCH, PAIS:

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI IPC: F01B 9/-; F02B 75/32; F16H 21/18, 21/22, 21/28 & Keywords: cam, off-set, eccentric, disc, ring, circular, circle, annular

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2000/008325 A (OZDAMAR) 17 February 2000 Whole document	
A	GB 1460986 A (AIDA ENGINEERING KABUSHIKI KAISHA) 6 January 1977 Whole document	
A	DE 2519908 A (LAMBRECHT) 11 November 1976 (equivalent Derwent abstract accession no. L2095X/47, Class Q51) Whole document and Derwent abstract	
A	DE 3904716 A (SCHILLER) 23 August 1990 (equivalent Derwent abstract accession no. 90-261654/35, Class Q51) Whole document and Derwent abstract	

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
23 July 2004

Date of mailing of the international search report
29 JUL 2004

Name and mailing address of the ISA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer
D.R. LUM
Telephone No : (02) 6283 2544

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/000808

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member	
GB	1460986	DE	2438145
FR	2240104	JP	50037964
WO	0008325	AU	53897/99
EP	1102925		
DE	2519908	NONE	
DE	3904716	NONE	
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.			
END OF ANNEX			